

Caput ~~Interd~~

Exercise

9.3

p336

2

### Exercise

9.3

→ Present Value of Compound Discount. P 336

① Find PV

- Compound discount

- \$1600

- Due in 4.5 yrs  $(2 \times 4.5 \text{ yr} = 9 \text{ periods})$

- 4%

- Semi annual discount  $(i = 4\% \text{ ann} / 2 = 2\% / \text{period})$

$$PV = \frac{FV}{(1+i)^N}$$

$$= \frac{1600}{(1+0.02)^9}$$

$$= \frac{1600}{1.195}$$

$$= \underline{\underline{\$1338.81}}$$

∴ The Current Value of the \$1600 due in 4.5 yrs is \$1338.81

## Exercise 9.3 p336

(2)

2500 in 6yrs + 3mts  
interest 6% =  $6/4 = 1.5\%/prd$   
Compounded quarterly = 6yrs 3mts = 25 quarters

$$PV = \frac{FV}{(1+i)^n}$$

$$= \frac{2500}{(1+0.015)^{25}} = \frac{2500}{1.45}$$

$$= \sim \underline{\underline{\$1724.14}}$$

$\therefore$  The Present Value of 2500 in 6yrs 3mt  
at that rate is  $\$1724.14$

Exercise  
9.3

→ p336

3.

$$FV = 1250$$

5yrs

10%

Quarterly Compd (4x/yr)

→

$$10\%/4 = 2.5\% \text{ p.p.}$$

→

$$4 \text{ p.p./yr} \times 5 \text{ y} = 20 \text{ p.p.s}$$

$$PV = \frac{FV}{(1+i)^N}$$

$$= \frac{1250}{(1+0.025)^{20}}$$

$$= \frac{1250}{1.6386}$$

$$= \$762.85$$

∴ We'd need to put 762.85 in an investment now earning the rate prescribed to get \$1250 in 5yrs.

## Exercise 9.3 → P 336

- ④ How much we need to invest to:  
get \$2000 → FV  
in 7 yrs. (12 mths a yr  $\cdot 7 = 84$  mths)  
9% Compounded monthly ( $9\%/12 = 0.75\%$  PP)
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$$\begin{aligned} PV &= \frac{FV}{(1+i)^N} \\ &= \frac{2000}{(1 + \cancel{0.09} 0.0075)^{84}} \\ &= \frac{2000}{1.8732} \\ &= \$ \underline{\underline{1067.69}} \end{aligned}$$

We would need to invest  
1067.69 now at the prescribed rate  
to get \$2000 in 7 yrs.

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